Touching an Aseptic Injection Site Prior to Intravenous Administration: Can microorganisms be introduced to the aseptic area?

Tina L. Ruth
IU School of Medicine Health Professions Program
Indiana University-Purdue University Indianapolis

Purpose

Touching an aseptic injection site to relocate a vein is a common practice when preparing for intravenous catheterization. The purpose of this research was to determine if touching an aseptic injection site prior to intravenous administration with the use of non-sterile gloves could introduce microorganisms.

Methods

Two different sampling techniques were evaluated. Technique 1 samples were taken from a technologist who donned a pair of non-sterile latex free gloves prior to preparing the materials used for injection and vein palpation. Technique 2 samples were taken from a technologist who donned a pair of non-sterile latex free gloves after preparing the materials used for injection and vein palpation. In both techniques, the injection site was made aseptic with an isopropyl alcohol prep pad. Asepsis was maintained by not touching the injection site to relocate the vein. The procedure was stopped just before the technologist would touch the aseptic site for vein relocation. The gloved tips of digits two, three, and four of the right and left hands were used to inoculate a blood agar petri dish. The petri dishes were incubated for 48 hours at 37° Celsius. A method blank (control) was collected for each sample set collected from Technique 1 and Technique 2. A total of twenty samples were collected, ten from each technique.

Results

The method blanks and samples both showed observable growth of microorganisms (potential for contamination). 14% (1 out of 7) of the method blanks showed growth. 80% (8 out of 10) of both the right and left hand samples using Technique 1 showed growth. 90% (9 out of 10) of the right hand samples of Technique 2 showed growth, and 60% (6 out of 10) of the left hand samples showed growth.

Conclusion

Microorganisms could be introduced to the aseptic injection site with commonly used injection techniques.